



RK590

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/787,501

TC/A.U.: 1773

5 Applicant: Rodway

Examiner: Kruer, Kevin R.

Filing Date: 03/16/2001

Title: Electrical Wire Insulation

Mail Stop AF

10 Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

REPLY

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Sir,

This paper is filed in response to the Office Action mailed 10/20/2003, which was a final rejection. Reexamination, reconsideration and allowance are respectfully requested in view of the
20 Amendments and Remarks below. Applicant requests an extension of one month, i.e. to February 20, 2004, for filing this reply. A check for \$110.00 is attached to pay this extension.

Interview and Possible Further Interview

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As set out in detail below, the rejections and objections raised in the Office Action were discussed in a telephone interview on February 17, 2004. The amendments and arguments set out below take account of that interview, and it is believed that they clearly overcome all the

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outstanding rejections and objections. If, however, the Examiner thinks otherwise, he is asked call the undersigned (650-854-6304). The Examiner can be assured that a further telephone interview will, in the words of MPEP 713.09, "expedite the issues for appeal or (more probably) dispose of the application".

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Amendments to the Specification begin on page 8 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 12 of this paper.

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Remarks/Arguments begin on page 21 of this paper.

Page and Line References to the PCT specification in this Reply

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Except where otherwise noted, the references in this Reply to the PCT specification are to the text filed at the PTO when filing the application under 35 USC 371, which is believed to be the same as the text originally filed with the PCT application itself. However, there are minor differences between the PCT specification filed with the application under 35 USC 371 and the published PCT specification. These differences relate only to the precise positioning of the

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words on the pages, not to the words themselves. It seems possible that the Examiner is working from the published PCT specification. Therefore, where there is a difference between the PCT specification filed with the application under 35 USC 371 and the published PCT specification, the page and line reference in the published PCT specification is also given in parentheses.

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Neither the PCT specification filed with the application under 35 USC 371 nor the published PCT specification contains line numbers. The line numbers given in this Reply are based on a count of all the lines, including the lines which do not contain words; thus, the number of a line at the end of one paragraph, and the number of a line at the end of the next paragraph, differ by a count of 2.

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Telephone Interview.

The Examiner is thanked for his courtesy during the telephone interview which took place between the Examiner and the undersigned on February 17, 2004. The basis for the interview was a draft Reply previously submitted to the Examiner. The issues discussed during the interview were the rejections under 35 USC 112 and the objections under 35 USC 132, many of which are closely related to each other and depend upon the disclosure of the PCT specification as filed. Paragraphs (A) to (L) below provide the "complete written statement" called for by MPEP 713.04. So that these paragraphs can also serve as the basis for a complete reply to all the outstanding rejections and objections, these paragraphs also refer to various matters not discussed, or discussed only tangentially, during the interview, and to the amendments requested below.

(A) The Examiner maintained his position, in rejecting claims 28-56 (and also in objecting to portions of the amendments set out in paragraphs 10 and 16 of the previous Reply), that there was no support in the original disclosure for specific reference to first and second non-polymeric components. The Examiner agreed that the claims could be drafted using "comprising" language which admitted the possibility of other ingredients.

The amended claims 28-56 set out below do not refer to first and second non-polymeric components, and use "comprising" language such that the claims cover polymeric compositions containing other ingredients in addition to the specified polymeric component. The corresponding passages in the descriptive part of the specification have been likewise amended.

(B) The Examiner maintained his position, in rejecting claims 28-56 (and also in objecting to portions of the amendment set out in paragraph 10 of the previous Reply), that there is no support in the original disclosure for a carbonyl-containing polymer that does not have a non-aromatic backbone.

The amended claims 28-56 set out below are limited to carbonyl-containing polymers having a non--aromatic backbone. The corresponding passages in the descriptive part of the specification have been likewise amended.

(C) The Examiner changed his position, in rejecting claims 28-56 (and also in objecting to portions of the amendment set out in paragraph 10 of the previous Reply), that there was support

for a "metallic conductor". The Examiner agreed that there was support for a metallic conductor on page 9, line 6 (page 10, line 6, of the published PCT specification).

The amended claims 28-56 set out below therefore retain the references to metallic conductors (and claim 51 has been amended to refer to "a metallic conductor" rather than "an electrical conductor"). The corresponding passages in the descriptive part of the specification likewise remain unchanged.

(D) There was no discussion of the Examiner's position, in rejecting claims 28-56 and (separately) claim 35 (and also in objecting to portions of the amendment set out in paragraph 10 of the previous Reply), that there is no support in the original disclosure of a second layer comprising a blend of PVDF and the VDF copolymer. The draft Reply indicated that, in the interests of speedy prosecution, Applicant would not argue that there was such support.

The amended claims 28-56 set out below no longer refer to a blend of PVDF and the PVDF copolymer, but rather to PVDF **or** the VDF copolymer. It is noted, however, that the claims do cover such blends when either the PVDF or the VDF copolymer is present in amount at least 50% by weight, based on the weight of the second polymeric composition. The corresponding passages in the descriptive part of the specification have likewise been amended.

(E) The Examiner maintained his position, in rejecting claims 30 and 49, that there is no support in the original disclosure for immersing the wire into an acetone bath with the depth of 4.2 mm, but agreed that there was support in the original disclosure, at page 5, lines 2-6 (page 5, lines 5-9, of published PCT specification) for immersing the wire to a depth of 42 mm in an acetone bath (i.e. "to a depth of... 70% of the length of" the 60 mm long sample).

In the amended claims set out below, claims 30, 39 and 49 now recite the procedure for which there is agreed basis. The corresponding passages in the descriptive part of the specification have likewise been amended.

(F) The Examiner maintained his position, in rejecting claims 31, 37-46 and 47-50 (and also in objecting to portions of the amendment set out in paragraph 14 of the previous Reply), that there is no support in the original disclosure for blending the carbonyl-containing polymer with any polyolefin. However, the Examiner did agree that there was basis in claim 8 of the original disclosure for blending the carbonyl-containing polymer with polyethylene generally, without restriction to high-density polyethylene.

In the amended claims 31, 37-46 and 47-50 set out below, the term "a polyolefin" has been replaced by --polyethylene--. The amendment set out in paragraph 14 of the previous Reply has been canceled.

5 (G) The Examiner changed his position, in rejecting claim 52, that there was no support in the original disclosure for "bringing the respective layers into contact with each other at temperature above the melting or softening point of the polymeric material of at least one layer". The Examiner agreed that there is support for claim 52 in claim 18 of the original disclosure.

In the amended claims set out below, claim 52 is unchanged.

10 (H) The Examiner changed his position, in rejecting claim 54, that there was no support in the original disclosure for "a method of coextruding the layers (i) and (ii) onto the conductor in a single pass of the conductor from an extrusion process pay-out device to an extrusion process take-up device". The Examiner agreed that there was support for claim 54 in claim 20 of the original disclosure.

In the amended claims set out below, claim 54 is unchanged.

15 (I) There was no explicit discussion of the Examiner's objection that the original disclosure does not contain support for the last four lines of the amendment requested in paragraph 8 of the previous Reply, in particular the newly added " in one or more areas such as resistance to abrasion, peeling (especially if one of the layers is damaged), blistering (especially if heat is applied), lamination, creasing and wrinkling (especially when the insulation is subject to
20 mechanical stress or exposure to solvents)." The Examiner did note, however, that the disperse nature of the original disclosure made it difficult to identify passages of relevance, and that where Applicant could point to explicit disclosure for an amendment to which objection had been made, the objection would be withdrawn.

25 It is submitted that there is basis for the amendment in question on page 4, lines 18-28 (now cancelled) of the specification as filed (page 4, lines 20-30, of the published PCT specification), which reads as follows, with the particularly relevant passages in bold type.

Advantages of achieving a strong bond in accordance with this invention include:

*- **abrasion resistance of surface layer, and the insulation as a whole** can increase if it (the surface layer) is bonded to a substrate material;*

- *improved resistance to peel, especially if one of the layers is damaged/perforated;*

- *improved resistance to blistering of the two layers, if heat is applied;*

- *improved resistance to delamination/creasing/wrinkling between the two layers, e.g. due to mechanical stress or chemical exposure e.g. to solvents.*

- *achievement of reduced wire bend wrinkling and improvement in the above characteristics, while maintaining adequate cut-through and notch propagation resistance, the latter being unexpected since strongly adherent layers would normally be expected fairly easily to transmit a cut or notch in the outer layer through to the inner layer.*

In view of these passages, the paragraph in question has not been changed.

(J) There was no discussion of the Examiner's objection that the original disclosure does not contain support for the amendment requested in paragraph 11 of the previous Reply, the draft Reply having indicated that the amendment would be canceled.

In the amendments set out below, the paragraph in question has been canceled.

(K) The Examiner changed his position, in objecting to the amendment requested in paragraph 16 of the last Reply, that the original disclosure does not contain support for the enumerated additives to be added to layer (ii). The Examiner agreed that such support was provided by page 4, lines 10-16 (page five, lines 12-18, of published PCT specification), which states (emphasis added) that the layer (i) "may contain **additives such as antioxidants, pigments, fillers, flame retardants etc. as known per se to give the required properties**", and that the layer (ii) "**also may contain other additives as known per se to give it required properties**".

In the amendments requested below, the amendment requested in paragraph 16 of the last Reply has been replaced by a new amendment (in order to remove the reference to non-polymeric components), but the new amendment retains the reference to the enumerated additives in both the layers.

(L) There was no explicit discussion of the Examiner's objection that the original disclosure does not contain support for the last four lines of the amendment requested in paragraph 20 of the

previous Reply, in particular "in some embodiments of the invention, the first layer is in direct contact with the conductor. In some embodiments of the invention, the defined first and second layers are the sole insulation around the conductor. In other embodiments, the first and second layers are part of multilayer insulation including one or more other layers". The Examiner did
5 note, however, that the disperse nature of the original disclosure made it difficult to identify passages of relevance, and that where Applicant could point to explicit disclosure for an amendment to which objection had been made, the objection would be withdrawn.

In the amendments set out below, the passage to which the Examiner objected has been rewritten as follows.

10 The first layer can be in direct contact with the conductor. The insulation can consist of a first layer as defined and a second layer as defined. The insulation can be multilayer insulation, for example multiple alternating layers of the first and second polymeric compositions.

It is submitted that the original disclosure provides support for this amendment as follows.

15 (a) "The first layer can be in direct contact with the conductor".

(i) Claim 19 states (emphasis added) that the "layer (i) is **pressure extruded onto** the conductor."

(ii) Claim 20 states (emphasis added) that the "layers (i) and (ii) are **coextruded or tandem extruded onto** the wire."

20 (iii) Page 9, lines 1-6 (page 10, lines 1-6, of the published PCT specification), states (emphasis added) that "the inner layer of insulation... **was pressure extruded onto** the metallic conductor."

Thus, in each of these disclosures of an insulated wire of the invention, there is direct contact between the metallic conductor and the inner layer of insulation.

25 (b) "the insulation can consist of a first layer as defined and a second layer as defined."

(i) Claim 1 (and likewise claim 2) discloses (emphasis added) insulation "**comprising** (i) **at least** a first layer (as defined)... in contact with (ii) **at least** a second layer (as defined)". This is a disclosure of insulation comprising a single
30 first layer and a single second layer; and since the term "comprising" is well

understood to mean "consisting of or containing", it is also a disclosure of insulation consisting of a single first layer and a single second layer.

(ii) In the three specific examples of insulated wires disclosed on page 9 (page 10 of the published PCT specification), the insulation consists of a first layer as defined and a second layer as defined.

(c) " The insulation can be multilayer insulation, for example multiple alternating layers of the first and second polymeric compositions."

(i) Page 1, lines 5-6. (Page 1, lines 6-7, of the published PCT specification) states (emphasis added) that "the invention is especially useful in **multilayer insulation** of electrical wires".

(ii) Page 5, lines 18-27 (page 5, lines 22-31, of the published PCT specification) states (emphasis added) that "Examples include... dual or **multi-walled** extrusion... The layers ... could be coextruded, tandem extruded, **multi-pass extruded**, or coated by other means... pressured extrusion... is preferred for optimum adhesion of the second **and any subsequent insulation** layers to be applied to a pre-formed underlying layer."

(iii) Claim 12 states (emphasis added) "a wire... comprising **multiple alternating layers** of the materials constituting the said layers (i) and (ii)."

If the Examiner is of the opinion that there is no support for the requested amendment, he is asked to call the undersigned.